# Payload Development for International Space Station (ISS) Experiment (NA)

Completed Technology Project (2013 - 2014)

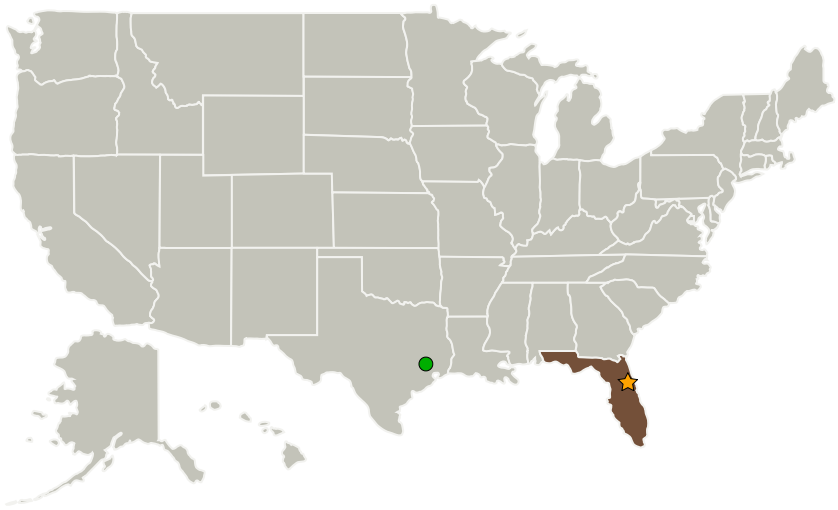
## Project Introduction

The Electrodynamic Dust Shield (EDS) technology (an active dust mitigation/dust transport system to enable planetary exploration) was selected as one of the core experiments for the Materials International Space Station X (MISSE-X) project. MISSE-X is an ISS external platform designed to advance the TRL of materials and devices for future space exploration. The purpose of the EDS MISSE-X experiment is to demonstrate operation of the EDS while exposed to the space environment (vacuum, full spectrum of solar radiation, solar wind flux, and cosmic rays). In the spring of 2013, the MISSE-X project was suspended while NASA restructured the project's management approach. Soon after, we were selected as one of the experiments for the Space Test Program-Houston 5 (STP-H5), a NASA program for a U.S. Department of Defense ISS experiment. STP-H5 is also an ISS external platform to advance the TRL of devices and materials. The EDS payload started to be modified to fit STPH-5 requirements. Experiment integration costs for STPH-5 are high and funding for participation of the EDS payload could not be obtained. The EDS Experiment pulled out of STP-H5 in November of 2013. We are now offereing the EDS as Government Suppied Equipment to the three partners in the NASA CATALYST project. The Pacific International Space Exploration Systems (PISCES) has selectred the EDS as a payload for their lunar flight experiment and is working with the CATALYST partners to participate in their mission.

## Anticipated Benefits

Asteroid Redirect Mission

## Primary U.S. Work Locations and Key Partners

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## Organizational Responsibility

**Responsible Mission Directorate:**

Mission Support Directorate (MSD)

**Lead Center / Facility:**

Kennedy Space Center (KSC)

**Responsible Program:**

Center Independent Research & Development: KSC IRAD

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| Organizations Performing Work | Role | Type | Location |
|---|---|---|---|
| ★Kennedy Space Center(KSC) | Lead Organization | NASA Center | Kennedy Space Center, Florida |
| ●Johnson Space Center(JSC) | Supporting Organization | NASA Center | Houston, Texas |

| Primary U.S. Work Locations |
|---|
| Florida |

## Stories

Space Environmental Testing of the Electrodynamic Dust Shield Technology *(https://techport.nasa.gov/file/3264)*

Space Environmental Testing of the Electrodynamic Dust Shield Technology *(https://techport.nasa.gov/file/3265)*

## Project Management

**Program Manager:**

Barbara L Brown

**Project Manager:**

Pamela A Mullenix

**Principal Investigator:**

Carlos I Calle

**Co-Investigators:**

Michael D Hogue
Paul J Mackey

## Technology Areas

**Primary:**

- TX07 Exploration Destination Systems
  - TX07.2 Mission Infrastructure, Sustainability, and Supportability
    - TX07.2.1 Logistics Management